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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,549	06/25/2001	Irit Loy	LOY=4	5844

1444 7590 04/21/2004
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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT PAPER NUMBER

2171

DATE MAILED: 04/21/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/887,549

Applicant(s)

LOY ET AL.

Examiner

Etienne P LeRoux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claims Status:

Claims 2, 4 and 14-39 are cancelled.

Claims 1, 3 and 5-13 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1, 3, 5 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 5,897,638 issued to Lasser et al (hereafter Lasser '638) in view of technical paper

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titled The Data Management Applications Programming Interface by Peter Lawthers (hereafter Lawthers).

Claim 1:

Lasser '638 discloses:

- creating a session of a data management application in the cluster using a data management application on a session node selected from among the nodes in the cluster [col 5, lines 14-29]
- receiving a request submitted to the parallel file system by a user application on a source node in the cluster to perform an operation of a file in one of the volumes of storage [subroutines 4 per Fig 1]
- sending a notification of a DM event to the session node responsive to the request [RPC, col 5, lines 20-28]
- obtaining a data management access right from the DMAPI by processing the event at the session node [transactional lock, col 5, lines 29-31]
- performing the operation on the file using the access right [col 5, lines 32-49].

Lasser '638 discloses the elements of claim 1 per the above.

Lasser '638 fails to disclose a data management application program interface (DMAPI)

Lawthers discloses a data management application program interface (DMAPI)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lasser '638 to include a data management application program interface (DMAPI) as taught by Lawthers [abstract].

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The ordinarily skilled artisan would have been motivated to modify Lasser '638 per the above for the purpose of enhancing portability of applications across different platforms [Lawthers – abstract].

Claim 3:

The combination of Lasser '638 and Lawthers discloses:

- wherein receiving the request comprises generating an event responsive to the request, and [subroutines 4 per Fig 1 and col 5, lines 20-29, Lasser '638]
- wherein obtaining the right at the session node comprises associating a DM token with the right at the session node for use in invoking a function to be applied to the file and associating the token with the event [General Expression 45 per Fig 4 and col 10 lines 55-58, Lasser '638]
- wherein performing the operation comprises migrating data at a plurality of the nodes simultaneously by presenting the token in connection with the DMAPI function [General Expression 45 per Fig 4 and col 10 lines 55-58, Lasser '638]
- wherein initiating the data management application comprises initiating a data migration application, so as to free storage space on at least one of the volumes of data storage [page 330, Data Control, second paragraph, Lawthers]

Claim 5:

The combination of Lasser '638 and Lawthers discloses wherein obtaining the data management access right comprises acquiring a data management lock on the file, so as to restrict other data management and file operations on the file while the lock is held [col 7, lines 13-21, Lasser '638].

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Claim 11:

The combination of Lasser '638 and Lawthers discloses wherein acquiring the data management lock comprises selecting the lock from a table of locks provided for both file operations and data management operations [page 330, Data Control, Lawthers].

Claim 12:

The combination of Lasser '638 and Lawthers discloses wherein performing the operation comprises calling a DMAPI function to perform a data management operation, and wherein acquiring the data management lock comprises acquiring, in a course of executing the DMAPI function, one of the locks provided for the file operations for the duration of the DMAPI function, so as to enable calling the DMAPI function without presenting a DM token [Lasser '638, col 7, lines 13-21 and Lawthers].

Claim 13:

The combination of Lasser and Lawthers discloses wherein acquiring the data management lock comprises providing the data management lock within a hierarchy of locks supported by the parallel file system [page 327, What's the problem?, Lawthers].

3. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lasser '638 and Lawthers in view of US Pat No 6,289,464 issued to Wecker et al (hereafter Wecker '464).

Claim 6:

The combination of Lasser '638 and Lawthers discloses the elements of claims 1 and 5 as noted above.

The combination of Lasser '638 and Lawthers fails to disclose wherein the operation is a data management operation, and wherein acquiring the data management lock comprises holding the lock over a sequence of multiple kernel calls in the parallel file system.

Wecker '464 discloses wherein the operation is a data management operation, and wherein acquiring the data management lock comprises holding the lock over a sequence of multiple kernel calls in the parallel file system [col 19, lines 9-11].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Lasser '638 and Lawthers to include wherein the operation is a data management operation, and wherein acquiring the data management lock comprises holding the lock over a sequence of multiple kernel calls in the parallel file system as taught by Wecker '464.

The ordinarily skilled artisan would have been motivated to modify the combination of Lasser '638 and Lawthers per the above for the purpose of system initialization [col 18, line 61].

Claim 7:

The combination of Lasser '638 and Lawthers discloses the elements of claims 1 and 5 as noted above.

The combination of Lasser '638 and Lawthers fails to disclose wherein the operation is a file operation, and wherein acquiring the data management lock comprises holding the lock for a single kernel call in the parallel file system.

Wecker '464 discloses wherein the operation is a file operation, and wherein acquiring the data management lock comprises holding the lock for a single kernel call in the parallel file system [col 19, lines 9-11].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Lasser '638 and Lawthers to include wherein the operation is a file operation, and wherein acquiring the data management lock comprises holding the lock for a single kernel call in the parallel file system as taught by Wecker '464.

The ordinarily skilled artisan would have been motivated to modify the combination of Lasser '638 and Lawthers per the above for the purpose of system initialization [col 18, line 61, Wecker]

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lasser '638, Lawthers and Wecker '464 and further in view of US Pat No 6,625,601 issued to Molloy (hereafter Molloy '601).

Claim 8:

The combination of Lasser '638, Lawthers and Wecker '464 discloses the elements of claims 1, 5 and 7 as noted above.

The combination of Lasser '638, Lawthers and Wecker '464 fails to disclose wherein the file operation is one of a plurality of file operations to be performed on the file, and wherein acquiring the data management lock comprises allowing the plurality of file operations to hold respective data management locks simultaneously without mutual conflict.

Molloy '601 discloses wherein the file operation is one of a plurality of file operations to be performed on the file, and wherein acquiring the data management lock comprises allowing the plurality of file operations to hold respective data management locks simultaneously without

mutual conflict [releasing any exclusive and shared lock associated with the identified transaction per claim 36].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Lasser '638, Lawthers and Wecker '464 to include wherein the file operation is one of a plurality of file operations to be performed on the file, and wherein acquiring the data management lock comprises allowing the plurality of file operations to hold respective data management locks simultaneously without mutual conflict as taught by Molloy '601.

The ordinarily skilled artisan would have been motivated to modify the combination of Lasser '638, Lawthers and Wecker '464 for the purpose of controlling access to a dictionary in a data processing system operating in a distributed transaction framework [claim 36].

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Lasser '638 and Lawthers and further in view of Molloy '601.

Claim 9:

The combination of Lasser '638 and Lawthers discloses the elements of claims 1 and 5 as noted above.

The combination of Lasser '638 and Lawthers fails to disclose wherein acquiring the data management lock comprises acquiring an exclusive lock.

Molloy '601 discloses wherein acquiring the data management lock comprises acquiring an exclusive lock [claim 36].

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Lasser '638 and Lawthers to include wherein acquiring the data management lock comprises acquiring an exclusive lock as taught by Molloy.

The ordinarily skilled artisan would have been motivated to modify the combination of Lasser '638 and Lawthers per the above for the purpose of controlling access to a dictionary in a data processing system operating in a distributed transaction framework [claim 36].

Claim 10:

The combination of Lasser '638 and Lawthers discloses the elements of claims 1 and 5 as noted above.

The combination of Lasser '638 and Lawthers fails to disclose wherein acquiring the data management lock comprises acquiring a shared lock.

Molloy '601 discloses wherein acquiring the data management lock comprises acquiring a shared lock [claim 36].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Lasser '638 and Lawthers to include wherein acquiring the data management lock comprises acquiring an exclusive lock as taught by Molloy .

The ordinarily skilled artisan would have been motivated to modify the combination of Lasser '638 and Lawthers per the above for the purpose of controlling access to a dictionary in a data processing system operating in a distributed transaction framework [claim 36].

Response to Arguments

Applicant's arguments filed 3/19/2004 have been fully considered but they are not persuasive.

First Applicant Argument:

Applicant states on page 14 that Lasser does not disclose source and session nodes.

First Examiner Response:

Examiner is not persuaded. Lasser discloses the following in column 3, line 64 through column 4, line 13:

As a distributed service. In this case, the owner of the computers containing the control and data trees would need to ensure that a "multifile server" was running at all times. The subroutines explained below would then be embedded as part of the server, which would also incorporate a distributed computing environment. Applications wishing to use these services would contain "stub subroutines" which would contact the appropriate servers to perform multifile operations. Preferably, these stub subroutines would mimic the interface of the native file system interface, in order to minimize the work needed to adopt the multifile system. Communications between the driver and the program instances might then be governed by a second distributed computing environment or, alternatively, by the same distributed computing environment as is used by the multifile server.

Examiner maintains the above multifile server reads on applicant's source node and the computers containing the control and data trees reads on applicant's session node. Furthermore, Lasser discloses in column 8, lines 10-23 the following:

Remote Procedure Calls (RPCs). An RPC command causes a subroutine, specified by a "command identifier string", to be invoked on some remote system, specified by a "host name." The issuer of the RPC command may provide parameters to be passed to the specified subroutine; the subroutine may return a value which will be returned to the issuer of the RPC. If the RPC modifies any permanent data structures (e.g., the contents of a data storage system), then the RPC must participate in the transaction protocol defined by the distributed computing environment, such that if the transaction is rolled

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back, the effects of the RPC will be undone, and if the transaction is committed, the effects of the RPC will be made permanent.

Examiner maintains a source node and a session node are inherent in a system using remote procedure calls.

Second Applicant Argument:

Applicant states on page 14 that Lawthers does not disclose source and session nodes.

Second Examiner Response:

Examiner is not persuaded. Lawthers discloses the following in the third paragraph under the heading Goals of the DMAPI:

The DMAPI benefits operating system vendors, independent software vendors (ISVs) and end users alike by providing a consistent, platform-independent interface for development of data management applications. Applications vendors need to support only one interface for all platforms, not one per platform. Filesystem and OS vendors need to implement only one interface for data management applications, instead of a separate interface for each specific application they want to support.

Third Applicant Argument:

Applicant states in the first paragraph on paragraph 15 "Worfolk uses the term source node in the conventional manner to indicate the point from which a communication signal is transmitted (see paragraph 3, for example). He uses the term session to refer to an exchange of messages (paragraph 32). It is not clear from the Examiner's remarks which actions of the source node described by Worfolk correspond to sending a DM event notification in response to a file request, or where and how this event might be processed in connection with obtaining an access right for performing a file operation."

Third Examiner Response:

Examiner is not persuaded. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In fact in supra office action above limitation was rejected over Laser in view of Lawthers.

Fourth Applicant Argument:

Applicant states in the second paragraph on page 15 "Applicant respectfully submits that Worfolk neither teaches nor suggests these elements of claim 1."

Fourth Examiner Response:

Examiner is not persuaded. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In fact in supra office action above limitation was rejected over Laser in view of Lawthers.

Fifth Applicant Argument:

Applicant states in the third paragraph on page 16 "Although Wecker describes making a kernel call to lock certain driver code and buffers (col 19, lines 9-11), he neither teaches nor suggests that a lock of any kind – let alone a data management lock – be held over a sequence of multiple kernel calls.

Fifth Examiner Response:

Examiner is not persuaded. Examiner maintains that Wecker in column 19, lines 9-11 discloses a kernel call which locks the driver code and allocated buffers in memory. Examiner

maintains that the teaching of Wecker reads on a data management lock. Furthermore, Lasser discloses transactional locks in column 5, lines 29-31.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

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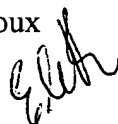
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Patent related correspondence can be forwarded via the following FAX number (703) 872-9306

Etienne LeRoux

4/19/2004



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